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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,233	01/16/2002	Hidefumi Sakata	111245	3434

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EXAMINER

LEFLORE, LAUREL E

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,233

Applicant(s)

SAKATA ET AL.

Examiner

Laurel E LeFlore

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: In paragraph [0013], "can preferably formed" should be "is preferably formed". In paragraph [0014], "can preferably arranged" should be "are preferably arranged". In paragraph [0039], it is stated that the pitches "can be preferably equal to or shorter than approximately one fifth of the shortest wavelength of visible light, in other words, about 450 nm." This statement is repeated in paragraph [0066]. However, the shortest wavelength of visible light is about 400 nm. Thus, one fifth of the shortest wavelength of visible light is about 80 nm, not 450 nm.

Appropriate correction is required.

Claim Objections

2. Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 13 claims projections being formed by providing a projection on the transparent electrode. However, claim 1 claims a plurality of projections formed on the surface of at least one of the pair of transparent electrodes.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inou 6,078,274 in view of Raj et al. 6,326,723 B1.

In regard to claims 1, 8, 13 and 16, Inou discloses a touch panel that comprises a pair of substrates (one of which is flexible) opposing each other and having a predetermined spacing therebetween (See figure 1, elements 1 and 3. See column 4, lines 33-37, disclosing "the insulating substrate 1 and the flexible insulating substrate 3 are held 10 μ m apart"), and a pair of transparent electrodes having a respectively predetermined pattern, each of the transparent electrodes being formed on an inner surface of each of the pair of substrates. See figure 1, elements 2a and 2b and column 4, lines 20-32, disclosing "an insulating substrate 1...on which is provided a transparent conductive film 2a...and a flexible insulating substrate 3...on which is provided a transparent conductive film 2b." It is understood that the two transparent conductive films are a pair of transparent electrodes, as they are both conductive layers that are formed of the same material (indium tin oxide) and are formed "substantially on the entire inner surfaces of the" substrates. (See paragraph [0005] of the specification of the claimed invention.) Inou further discloses a plurality of projections formed on the surface of at least one of the pair of transparent electrodes, the projections being formed to have a substantially periodical pitch. See figures 1 and 2, element 8, figure 3, and column 4, lines 42-46, discloses that, "On the transparent insulating

films 2a and 2b, antireflective films 8 are provided by. For example, offset printing, in the form, shown in FIG. 3, of square islets 100 nm thick, each with a pitch Pd of 100 μ m".

Inou differs from the claimed invention in that the projections in Inou's invention have a pitch of 50 μ m at the smallest (see figure 8) and thus do not have a pitch "that is shorter than any wavelength of visible light." Raj et al. discloses a plurality of projections (see figure 6, element 16) stating, in column 3, lines 21-22, "The elements 16 may be fabricated on planarized surfaces using a technique called holographic lithography which allows patterning by the interference. Feature sizes as small as 90 nanometers may be formed over large areas. Using this technique, moth-eye like surface relief array structures may be formed of an array of microscopic protrusions." In column 4, lines 28-32, Raj et al. further discloses that "the moth-eye like elements 16 may have relatively small feature sizes. For example in one embodiment of the invention, those feature sizes can be on the order of 100 nanometers. This means that there will be numerous scattering centers of a small region." It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Itou by making the projections have a pitch shorter than any wavelength of visible light, such as 100 nanometers, as disclosed by Raj et al. One would have been motivated to make such a change based on the teaching in column 3, lines 3-5, of Raj et al. to include a plurality elements for

absorbing light on the substrate, as (see column 3, lines 13-14) such "light trapping reduces back reflections or glare".

5. In regard to claim 2, Inou discloses an air space being formed between the pair of transparent electrodes. See figure 1, element 6 and column 4, lines 33-37. Also see rejection of claim 1.
6. In regard to claim 3, 4 and 6 Inou in view of Raj et al. discloses an invention that is similar to the claimed invention. See the rejection of claim 1 for similarities. Inou does not disclose that the projections become continuously smaller from a bottom to a top thereof, as a cone. Raj et al. discloses, "A variety of shapes and sizes of the moth-eye elements 16 may be formed, including...the conical elements 16 shown in FIG. 5. These structures have low reflectance over large wavelength bands and angular acceptance ranges." It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Inou in view of Raj et al. having the projections becoming continuously smaller from the bottom to the top, as a cone. One would have been motivated to make such a change based on the teaching of Raj et al. that such a shape would have low reflectance and angular acceptance ranges, thus further increasing light transmittance.
7. In regard to claim 5, Inou in view of Raj et al. discloses an invention that is similar to the claimed invention. See the rejections of claims 1, 3, 4 and 6 for similarities. Inou does not disclose that the projections become smaller in a stepwise manner from the bottom to the top thereof. However, if the projections

became smaller in a stepwise manner, and the steps were very small, then the projections would be becoming smaller in a continuous manner. Thus, the projections becoming smaller in a stepwise manner or continuous manner would be equivalents if the steps were small enough. Further, there is no disclosed criticality of the steps becoming smaller in a stepwise or continuous manner. Thus, change in form/shape is a design choice of no disclosed criticality. (Refer to *in re Dailey*, 149 USPQ 47 (CCPA 1976).)

8. In regard to claim 7, Inou further discloses that the plurality of projections is arranged with a substantially periodical pitch in at least two directions. Refer to figures 3-11, depicting various embodiments with intervals and pitches that are periodic.
9. In regard to claims 9 and 10, Inou discloses the plurality of projections is formed with the same pattern on both of the pair of transparent electrodes. See rejection of claim 1 and column 10, lines 26-30, which discloses that the foregoing embodiments may include such projections (which each have specific patterns of projections) on one or both of the conductive films. See figures 3-11, showing the patterns for the foregoing embodiments.
10. In regard to claim 11, Inou discloses that the plurality of projections formed on the surface of one of the pair of transparent electrodes has a pattern different from that of the other transparent electrode. See column 10, lines 26-30, which disclose that the projections may be formed on only one of the transparent films.

Thus, the pattern on this one film would be different than the pattern on the film without projections.

11. In regard to claim 15, Itou discloses that the touch panel is at least one of an analog resistive contact type, a digital resistive contact type, and an electrostatic capacitive coupling type. See column 1, lines 10-21, disclosing various types of touch panels to which the invention relates, including analog and digital resistive and capacitance-detecting.
12. In regard to claim 12, forming the projections on the surface of the substrate with the transparent electrode being formed over the projection of the substrate is functionally equivalent to forming the projections on the transparent electrode.
13. In regard to claim 14, Inou discloses a plurality of spacers positioned between the pair of transparent electrodes that maintain the spacing between the pair of transparent electrodes. See figures 2-3, element 4 and column 4, lines 28-37 disclosing spacers.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Saif et al. 6,583,935 B1 discloses a conductive layer with a thickness that is less than the wavelength of visible light for reduced reflection and increased light transmission.

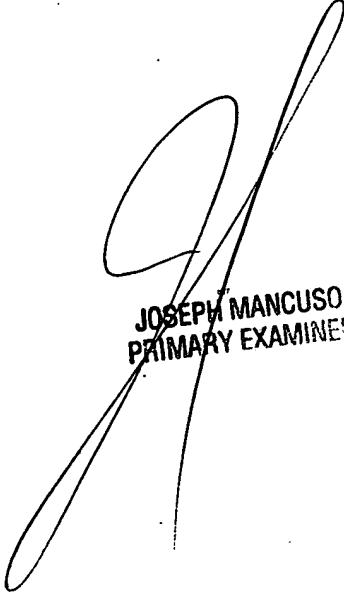
Noda et al. JP11-250764 A discloses a touch panel with transparent electrode layers that have a rough surface.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurel E LeFlore whose telephone number is (703) 305-8627. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

LEL



JOSEPH MANCUSO
PRIMARY EXAMINER